

REMARKS

Reconsideration of the application in view of the above amendments and the following remarks is requested. Claims 3-8, 10-11, 14-15, and 21-25 are in this application. Claims 3, 4, 6, 14, and 15 have been amended. Claims 1-2, 9, 12-13, and 16-20 have been cancelled. Claims 21-25 have been added to alternately and additionally claim the present invention.

Applicant requests the Examiner to indicate whether FIGS. 1A-1D, 2A-2D, 3A-3E, 4, 5, and 6 of the substitute formal drawings filed on August 15, 2003 (and received by the PTO on August 18, 2003) have been entered into the application. Applicant notes that in the next communication following receipt of the drawings, applicant is to be notified by the Examiner if the drawings have been entered and, if not entered, applicant should receive an explanation as to why the drawings were not entered. (See MPEP §608.02(h).)

The Examiner required that the application be restricted to claims 1-17 which are drawn to a semiconductor resistor, or claims 18-20 which are drawn to a method of forming a semiconductor resistor. On July 19, 2004, the below-signed attorney provisionally elected to prosecute apparatus claims 1-17, and hereby affirms that election. As a result, claims 18-20 have been cancelled.

The Examiner objected to the specification because the specification does not provide a Background of the Invention and a Brief Summary of the Invention. With respect to the Brief Summary of the Invention, the Examiner cited MPEP §608.01(d) which, in turn, cites 37 CFR §1.73. Applicant notes, however, that 37 CFR §1.73 states "a brief summary of the invention . . . should precede the detail description." Since the operative word in this instance is "should" (as opposed to shall or must), there does not appear to be any requirement that a Summary of the Invention section must be included within a patent application.

With respect to the Background of the Invention, the Examiner cited MPEP §608.01(c) which, in turn, states that the "specification should set forth the

Background of the Invention in two parts.” Further, applicant can find nothing within 37 CFR §1.71 which requires that a Background of the Invention section must be included within a patent application. Thus, from what applicant can determine, there is no requirement to include a Background of the Invention or a Summary of the Invention within a patent application.

The Examiner rejected claims 1, 3, 9, 12, 13, and 15 under 35 U.S.C. §103(a) as being unpatentable over Gonzalez et al. (U.S. Patent Application No. 2002/0017678) in view of Van Zant. The Examiner further rejected claim 6 as being unpatentable over Gonzalez et al. in view of Van Zant and further in view of Kalnitsky (U.S. Patent No. 6,475,873). For the reasons set forth below, applicant respectfully traverses these rejections.

Claim 3 has been amended to be in independent form, and recites, in part,

“a layer of insulation formed on the active region;

“a semiconductor structure formed on the isolation region and the layer of insulation so that the semiconductor structure partially overlies the active region; and

“a doped region of a second conductivity type formed in the active region, the doped region lying adjacent to a side wall of the semiconductor structure, the doped region having a length and a width, the length being substantially longer than the width.”

In rejecting the claims, the Examiner pointed to gate oxide layer 30 shown in FIG. 15 of Gonzalez as constituting the layer of insulation required by claim 1. In addition, the Examiner appears to point to conductive line 42 shown in FIG. 15 of Gonzalez as constituting the semiconductor structure required by claim 1. The Examiner further pointed to doped regions 62 and 64 shown in FIG. 15 of Gonzalez as constituting the doped region required by claim 1.

With respect to the doped region having a length and a width where the length is substantially longer than the width, the Examiner pointed to FIG. 15 of Gonzalez as teaching this limitation. However, from what applicant can determine,

Gonzalez does not teach or suggest that doped region 62 or doped region 64 has a length that is substantially longer than the width.

As shown in FIG. 16, which is a plan view, Gonzalez teaches that doped region 62 (the region to the left of the area marked 44) has a square shape. In addition, Gonzalez teaches that doped region 64 (the region to the right of the area marked 44) has a square shape. Thus, the Gonzalez reference fails to teach or suggest that the doped region has a length that is substantially longer than the width. As a result, claim 3 is patentable over Gonzalez in view of Van Zant. (Claims 1, 9, and 12-13 have been cancelled. Claim 15 now depends from claim 4, and is patentable for the same reasons as claim 4.)

With respect to claim 6, the Examiner appears to argue that Gonzalez in view of Van Zant teaches all of the limitations except for the limitation of a semiconductor region. As noted above, however, Gonzalez in view of Van Zant fails to teach or suggest that the doped region has a length that is substantially longer than the width. As a result, claim 6 is patentable over Gonzalez in view of Van Zant and further in view of Kalnitsky.

The Examiner also rejected claims 4, 5, 7, 10, 11, 16, and 17 under 35 U.S.C. §103(a) as being unpatentable over Gonzalez et al. in view of Van Zant and further in view of Wolf. For the reasons set forth below, applicant respectfully traverses this rejection.

Claim 4 has been amended to be in independent form, and recites, in part,

- "a layer of insulation formed on the active region;
- "a semiconductor structure formed on the isolation region and the layer of insulation so that the semiconductor structure partially overlies the active region; and
- "a doped region of a second conductivity type formed in the active region, the doped region lying adjacent to a side wall of the semiconductor structure; and
- "a pair of spaced-apart contact structures that make an electrical connection to the doped region, a current flowing into a first contact structure

of the pair, from the first contact structure through the doped region, and from the doped region out of a second contact structure of the pair.”

Claim 4 was also amended to more clearly recite the current flow.

In rejecting the claims, the Examiner noted that Gonzalez fails to disclose a pair of spaced-apart contact structures. The Examiner then pointed to the Wolf reference as teaching a pair of spaced-apart contact structures, and argued that it would be obvious to combine the teaching of Wolf with Gonzalez.

Applicant, however, can not find any discussion in the cited section of Wolf that teaches or suggests using a pair of contact structures to make an electrical connection to the doped region as required by claim 4. As shown in FIG. 16, Gonzalez teaches the formation of a single contact structure that is connected to doped region 62 (the small box with the X in the region to the left of the area marked 44). Applicant, however, has been unable to find any discussion in the cited section of Wolf that teaches or suggests using a pair of contact structures on doped region 62 as required by claim 4 in lieu of the single contact structure that is shown in FIG. 16.

Similarly, Gonzalez teaches the formation of a single contact structure that makes an electrical connection to doped region 64 (the small box with the X in the region to the right of the area marked 44). As above, applicant has been unable to find any discussion in the cited section of Wolf that teaches or suggests using a pair of contact structures on doped region 64 as required by claim 4 in lieu of the single contact structure that is shown in FIG. 16.

Thus, since the combination of references fails to teach or suggest a pair of contact structures, claim 4 is patentable over Gonzalez in view of Van Zant and further in view of Wolf. In addition, claim 5, which depends from claim 4, is patentable for the same reasons as claim 4. (Claims 7, 10, and 11 depend either directly or indirectly from claim 3, and are patentable for the same reasons as claim 3. Claims 16 and 17 have been cancelled.)

10/633,057

PATENT

The Examiner objected to claims 2, 8, and 14, but indicated that these claims would be allowable if amended to be in independent format to include all of the limitations of the base claim and any intervening claims. Due to the amendments to the claims, applicant has not placed claims 2, 8, and 14 in independent format.

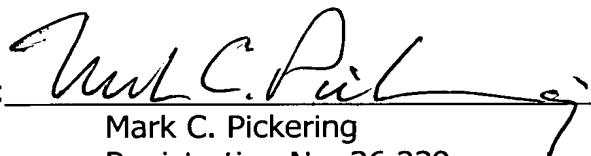
Thus, for the foregoing reasons, it is submitted that all of the claims are in a condition for allowance. Therefore, the Examiner's early re-examination and reconsideration are respectively requested.

Respectfully submitted,

Dated: _____

12-10-04

By: _____



Mark C. Pickering
Registration No. 36,239
Attorney for Assignee

P.O. Box 300
Petaluma, CA 94953-0300
Telephone: (707) 762-5500
Facsimile: (707) 762-5504
Customer No. 33402